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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,292	01/18/2000	Neil Kent McDonald	9D-HR-19273-McDonald	9518
7590	11/17/2004			
John S. Beulick Armstrong Teasdale LLP One Metropolitan Square, Suite 2600 St. Louis, MO 63102			EXAMINER DUONG, THO V	
			ART UNIT 3743	PAPER NUMBER

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/484,292

Applicant(s)

MCDONALD ET AL.

Examiner

Tho v Duong

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Receipt of applicant's amendment filed 8/3/2004 is acknowledged. Claims 1-4 and 6-22 are pending.

Response to Arguments

In view of applicant's amendment, claims 1-4 and 6-22 are now rejected in view of the new ground of rejection, whereas, reference to A. E. Brickman is the base reference to show the tube having a circular cross section.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 and 6-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claimed subject matter of "said (spirally) tube having a substantially circular outer diameter" renders the scope of the claim indefinite since it is not clear what applicant means by "circular outer diameter". A diameter is a length dimension across the center of a circle, but it never is a circular shape.

Claims 1-4 and 6-22 are further rejected, as best can be understood by the examiner in which the spiral tube has a circular cross section.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4,6-13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over A. E. Brickman (US 2,620,170) in view of C. A. Heuer (US 3,173,479). Brickman discloses (figure 3 and column 1, lines 13-45) a heat transfer panel unit for forming a condenser in a refrigerating system wherein the heat transfer panel unit comprising a plurality of wire fins (12) coupled to a plurality of substantially circular tubes (2) having U-shaped sections (4) defining a continuous layered heat transfer surface. Brickman does not disclose that the heat transfer panel unit is wound in a spiral shape with one closed end and the other end is equipped with a fan for drawing use in a particular application. Heuer discloses (figures 2-5, column 1, line 14-20 and column 3, lines 11-16) an apparatus of a refrigerator condenser comprising a spiraled tube and fin member (10) forming by bending the flat tube and fin member into a spiral including first and second ends (top and bottom) and a longitudinal asymmetrically rounded passageway (11'); the tube and fin member comprising an inner edge (13), an outer edge (12) and a longitudinal axis; the inner edge (13) and outer edge (12) substantially parallel to the longitudinal axis wherein the outer edge is located farther than the inner edge from the longitudinal axis; the tube and fin member (10) comprises two wraps (12,13); a baffle (26) mounted at the bottom end of the tube and fin member (10) to prevent air from entering the passage through the bottom end; a fan blade (31) is mounted so that the fan blade is located at the top end of the passageway to draw air into the passageway (11) from the periphery of the spiral and not through the bottom end. Heuer

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further discloses (figure 3) that the spiraled tube and fin member (10) has a plurality of U-shaped segment (bent portions). Heuer further discloses that the tube member and the fin member are formed from a heat transfer panel (1). Heuer discloses (column 1, lines 13-38 and column 4, lines 31-64)) an advantage for having a refrigerator condenser in form of a spiral with fan as described above is to increase heat transfer characteristic, efficiency, to low material cost of the condenser, and to enable the condenser suitable for use in a central air condition unit.

Since Brickman and Heuer are both from the same field of endeavor and/or analogous art, the purpose disclosed by Heuer would have been recognized in the pertinent art of Brickman. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ Heuer's teaching of having the refrigerating condenser in spiral form in Brickman's refrigerating condenser for the purpose of increasing heat transfer characteristic, efficiency, lowering material cost of the condenser, and enabling the condenser suitable for use in a central air condition unit. As regarding claim 22, the combination device of Brickman and Heuer results in the air being drawn into the longitudinal passageway substantially perpendicular to an outer surface of the tube and wire member since air is not entering from the bottom end but through the space between tubes. The combination device of Brickman and Heuer is considered to read on the claimed apparatus. Therefore, it is believed that the combination device of Brickman and Heuer is capable of being formed or used from the same method as claimed.

Specifically to claim 3, while Heuer discloses (figure 3) a step of bending the U-shaped segment about an axis (11'), which is perpendicular to a plurality of U-shaped section, reference to Brickman discloses that the axis that is perpendicular to the a plurality of U-shaped sections (4), is also a longitudinal direction of the wires (12). Therefore, the combination device of Heuer and

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Brickman would result in a step of bending the plurality of U-shaped segments about the axis parallel to the wires.

Claims 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brickman and C.A. Heuer in view of Simmons et al. (US 3,865,517). Brickman and Heuer substantially disclose all of applicant's claimed invention as discussed above except for the limitation that the fan blade assembly is external to the passage. Heuer further does not disclose that the fan blade assembly being external to a passage formed by the condenser. Simmons discloses (figure 2 and column 3, lines 1-13) a refrigeration condenser unit that has a fan blade assembly (23) mounted at an end of a condenser coil (3) and being external to an air passageway formed within the condenser coil to maximize the flow of air as the fan rotates and to avoid any impedance of airflow to the fan since the motor of the fan is not located within the passageway and on the discharge side of the fan. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Simmons's teaching in the combination device of Brickman and Heuer to maximize the flow of air as the fan rotates and to avoid any impedance of airflow to the fan since the motor of the fan is not located within the air passageway and on the discharged side of the fan.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

G. O'Brien (US 1,189,470) discloses an air cooler with spiral coil.

J. O. Carrey (US 1,691,180) discloses a condenser for refrigerating apparatus.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



TD

November 12, 2004



Tho Duong

Patent Examiner.